

Additions to the Horned Bark Beetle Genus *Cactopinus* Schwarz (Scolytidae)

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The monobasic bark beetle genus *Cactopinus* Schwarz (1899:11) was described to include the remarkable, horned *C. hubbardi* Schwarz. A revision by Blackman (1938) increased the number of known species to four. Three species were added (Wood, 1957, 1967) prior to the review by Bright (1967) which brought the number of species to nine. In his review Bright subdivided the genus by erecting a new genus, *Cactopinorus*, for *cactophthorus* Wood and *mexicanus* Wood, on the basis of the more widely distributed pronotal asperities and angulate or bisinuate sutures of the antennal club.

In the summer of 1967, the opportunity came for me to collect in south-central Mexico where several species of giant cactus occur. From that area, long series of three previously described species and five species of *Cactopinus* new to science were collected and observed. After examining all fourteen species in detail it was quite clear that *Cactopinus* is a monophyletic genus of perhaps great antiquity within the Scolytidae. Although the characters used to divide the genus by Bright, including the pronotal asperities and sutures of the antennal club, represent extremes within the genus their expression was not correlated with one another, nor did I see a distinct break within the group, based on these or other characters, that would justify the recognition of more than one genus or subgenus. *Cactopinorus* Bright, therefore, is a junior synonym of *Cactopinus* Schwarz.

In my key to the genera of North American Scolytidae (Wood, 1961:44), *Cactopinus* was placed in the tribe Micracini. After examining several thousand examples of Micracini and a thousand specimens of *Cactopinus*, new significance was seen in several characters not appreciated earlier. Except on the epistomal brush all setae on *Cactopinus* species are simple and hairlike; they are subplumose or fimbriated on the head and at least part of them are flattened or scalelike on the pronotum and elytral interstriae in the Micracini. In *Cactopinus* the front coxae are contiguous; they are separated by an intercoxal piece in all but the most specialized Micracini. The antennal funicle of *Cactopinus* is 5-segmented; it is 6-segmented in the Micracini. The anterior tibiae are more nearly similar to the Hexacolini than to Micracini. The scutellum in *Cactopinus* is very different from that of the Micracini. While the epistomal armature of *Cactopinus* is unique it probably will not stand as a distinguishing tribal character. The genus should be placed in the tribe Cactopinini Chamberlin (1939) evidently near the Micracini.

The species of *Cactopinus* evidently are highly host specific. Eight of the 14 known species were collected from various species of giant cactus, one from leaves of a very large species of *Yucca*, two from species of *Pinus*, one from species of *Rhus*, and two from species of *Bursera*. One of the *Bursera* inhabiting species,

spinatus Wood, also occurred in two other unidentified broadleaf tree genera. Except for *granulifer* Wood, which was collected in series with *microcornis* Wood and *nasutus* Wood, each of the species from giant cactus appeared to be taken from a different host species. *Carnegie gigantea*, for *hubbardi* Schwarz, is the only cactus host definitely associated with a bark beetle; however, it is quite probable that *Pachycereus pecten-aboriginum* is the host of *mexicanus* Wood.

All of the species are monogamous. A simple, elongate, cave-type tunnel is constructed within the host tissues; rather large egg niches are placed at somewhat irregular intervals along the margins. Very little effort is made to remove frass from the parent galleries. The adult beetles wallow in the frass and commonly are completely covered by an incrustation formed largely from the frass. Under these circumstances the sexes evidently experience some difficulty locating one another. Presumably, the male uses his horn, which is equipped with sensory hairs near its tip, as a probe to grope through the frass to locate his mate.

Seven of the eight species from giant cactus breed in cut or damaged arms in dead, drying tissue immediately below the yellow epidermis. In the laboratory several successive generations have been produced from the same small piece of pathetically dry cactus. This supports the supposition that under field conditions an infestation may continue in a suitable piece of host material for an unusually long period of time. The eighth species, *hubbardi*, breeds in scar tissue, such as that found lining woodpecker nests, deep inside of living host plants.

The diversity of the genus and the apparent availability of more than 30 species of suitable cactus hosts in Mexico alone, not to mention other potential hosts or areas, suggests that many more species will be added to the genus in the future.

KEY TO THE SPECIES OF *Cactopinus*

1. Body stout, less than 2.0 times as long as wide; male epistomal horns widely separated, the space between them at least as wide as one horn; antennal club large, circular, the sutures procurved; stria punctures coarse and very deep 2
- Body more slender, more than 2.2 times as long as wide; male epistomal horns contiguous at least on basal half; antennal club small, oval to large, circular, the sutures either straight or procurved; stria punctures smaller, usually not as deep 3
- 2(1). Male frons shallowly concave, its upper margin rounded; male horns very short, their height usually not greater than their basal width; lateral convexities on elytral declivity moderate, with striae 2 clearly marked before summit; interstria nodules on disc continue to base of elytra; Oaxaca; 1.5-1.9 mm (Figs. 1-2) **microcornis** Wood
- Male frons broadly, deeply concave, its upper margin abrupt; male horns each three or more times longer than its basal width; lateral convexities of elytral declivity abruptly, strongly elevated, striae 2 obsolete toward summit; interstria nodules obsolete on basal half of disc; Jalisco; 1.3-1.6 mm (Figs. 3-4) **mexicanus** Wood
- 3(1). A majority of pronotal asperities on anterior half, including anterior fourth; posteromedian area of pronotum weakly conical, usually not projecting behind posterior margin; pronotal asperities irregular in size, mostly fine, close, abundant; male frons deeply, broadly concave (except excavated but transversely flat to feebly concave in **cactophthorus**) 4
- A majority of pronotal asperities on posterior half, the anterior fourth usually unarmed;

- posteromedian area of pronotum strongly projecting over scutellum; pronotal asperities coarse, isolated, comparatively sparse; male frons transversely flat or convex 10
- 4(3). Pronotal asperities more widely distributed, supplemented in lateral areas by rounded granules extending to lateral margins; posteromedian margin of pronotum narrowly elevated into a small cone projecting very slightly above scutellum; body never covered by an incrustation 5
- Pronotal asperities more narrowly distributed on posterior half, the lateral areas devoid of granules; posteromedian area not narrowly elevated or produced into a cone; body usually largely covered by an incrustation 9
- 5(4). Antennal club rather small, distinctly longer than wide, the sutures straight; male frons more narrowly excavated, the upper half not wider than distance between eyes (except **cactophthorus**); usually smaller, 1.2-1.9 mm. 6
- Antennal club rather large, about as wide as long, the sutures rather strongly, subangulately procurved; upper half of male frontal excavation distinctly wider than distance between eyes; usually larger, 1.3-2.3 mm. 8
- 6(5). Male frons strongly excavated but transversely almost flat, the anterior margin of eye touching excavation when viewed from lateral aspect; frontal horn of male longer than median length of frontal excavation; stria punctures slightly smaller, not as deep; interstriae slightly wider, the punctures fine, somewhat confused; Puebla; 1.2-1.4 mm.
-**cactophthorus** Wood
- Male frons more narrowly concave, anterior margin of eye not reaching excavation when viewed from lateral aspect; frontal horn of male much shorter than length of frontal excavation; stria punctures slightly larger, deeper; interstriae narrower, the punctures somewhat coarser, usually uniseriate 7
- 7(6). Discal interstriae uniseriately punctured to margin of declivity; Oaxaca; 1.6-1.9 mm. (Figs. 5-6) **niger** Wood
- Discal interstriae uniseriately, closely, rather coarsely granulate on slightly less than posterior half; Oaxaca; 1.3-1.6 mm. (Figs. 7-8) **granulifer** Wood
- 8(5). Frons devoid of a median carina, sometimes feebly, obtusely raised in male; sutures of antennal club strongly, obtusely bisinuate; elytral punctures and pronotal asperities slightly larger, the posteromedian marginal cone on pronotum rather well developed; Puebla and Oaxaca; 1.4-1.7 mm. (Figs. 9-10) **nasutus** Wood
- Upper half of frons bearing an acutely elevated median carina in both sexes; sutures of antennal club angulate, 1 acute (more pronounced in male); elytral punctures and pronotal asperities slightly smaller, the posteromedian marginal cone on pronotum poorly developed; Hidalgo; 1.5-1.8 mm. (Figs. 11-12) **carinatus** Wood
- 9(4). Strial punctures fine, shallow, the interstitial punctures minute, confused; declivity rather gradual, more narrowly sulcate above, the elytral apex narrowly rounded behind; lateral convexities of declivity entirely devoid of granules or teeth; in **Yucca** leaves; San Luis Potosi to Hidalgo; 1.3-1.5 mm. **depressus** Bright
- Strial punctures rather coarse, deep; interstriae 1, 3 and 5 uniseriately granulate to base; elytra broadly rounded behind; declivity steep, rather broadly excavated, the lateral convexities each armed by about three to five coarse teeth; in **Bursera**, etc.; Jalisco to Oaxaca; 1.4-1.7 mm. **spinatus** Wood
- 10(3). Elytral declivity shallowly sulcate, the lateral convexities armed by minute granules; elytra rather narrowly rounded behind; male horn shorter than half length of pronotum; body slender, more than 2.5 times as long as wide 11
- Elytral declivity rather deeply sulcate, the lateral convexities armed by small to very large denticles; elytra very broadly rounded behind; male horn usually longer than half length of pronotum 12
- 11(10). Elytral declivity not sulcate except for feeble impression on interstriae 1, interstriae 1-3 not granulate; in **Pinus** spp.; Utah to southern California; 1.5-1.7 mm. **koebelei** Blackman
- Elytral declivity shallowly sulcate, interstriae 1-3 uniseriately, coarsely granulate; in **Rhus diversalobata** and **trilobata**; southern California; 1.3-1.8 mm. **rhois** Blackman

- 12(10). Body slender, 2.6 times as long as wide; sulcus extending anterior to declivital base between sutural striae; lateral convexities of declivity armed by fine, rounded granules; setae on sides of elytra very long, coarse; in *Pinus jeffreyi*; southern California; 1.6-2.0 mm. -----
 ----- *pini* Blackman
- Body stout, 2.4 times as long as wide; sulcus not extending anterior to declivital base; lateral convexities of declivity armed by pointed denticles ----- 13
- 13(12). Declivital interstriae 3 armed by small, pointed denticles; declivital sulcus deeper, narrower; antennal club larger, at least three times as wide as last funicular segment, 1.1 times as long as wide; in *Carnegia gigantea*; southern Arizona; 1.6-2.3 mm. ----- *hubbardi* Schwarz
- Declivital interstriae 3 armed by a row of about three to eight long, slender teeth; declivital impression almost flat; antennal club small, not more than twice as wide as last funicular segment, 1.3 times as long as wide; in *Bursera*; southern California; 1.6-2.1 mm. ----
 ----- *desertus* Bright

Cactopinus microcornis n. sp.

This species is closely related to *mexicanus* Wood, but it is easily distinguished by characters summarized in the above key.

Male.—Length 1.7 mm. (paratypes 1.5-1.9 mm.), 2.0 times as long as wide; color black.

Frons rather narrowly concave on median half, about two-thirds of concave area above upper level of eyes, lower area half way between epistomal margin and upper level of eyes armed by a pair of tubercles, distance between tubercles and height of each about equal to basal width of a tubercle; surface subreticulate, with rather sparse fine punctures; vertex rather coarsely rugose-reticulate; vestiture rather sparse, hairlike, abundant and coarse on epistomal margin. Antennal club circular in outline, the sutures moderately bisinuate.

Pronotum 0.89 times as long as wide; widest a third of length from base, the posterior two-thirds of sides very strongly arcuate, narrowly rounded in front; basal margin slightly produced behind in median area; summit on basal fourth; asperities begin on median third just behind anterior margin and extend to pointed posteromedian extremity projecting above scutellum, closely set but not high, the asperate area rather abruptly subinflated on posterior half; lateral areas almost smooth, with isolated, setiferous, rounded granules of moderate size; vestiture hairlike, rather sparse, of moderate length.

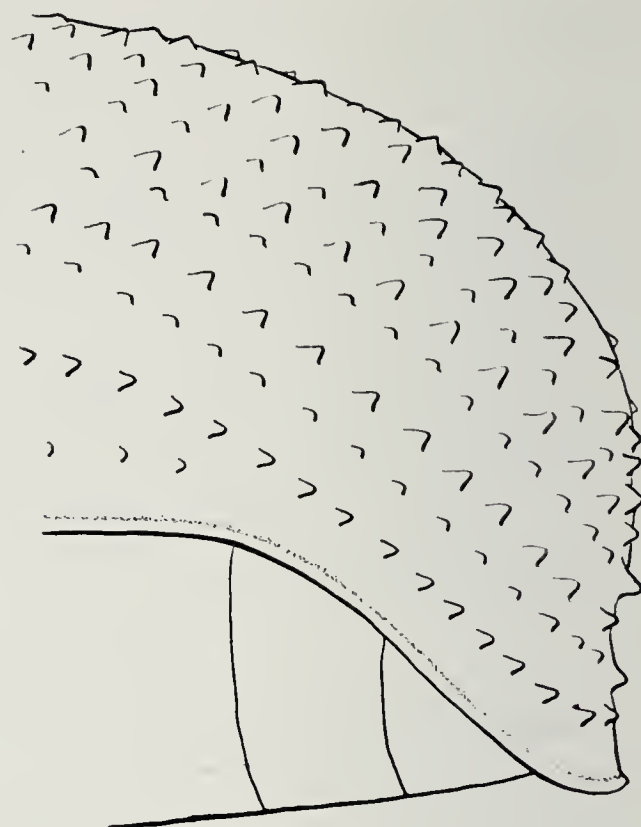
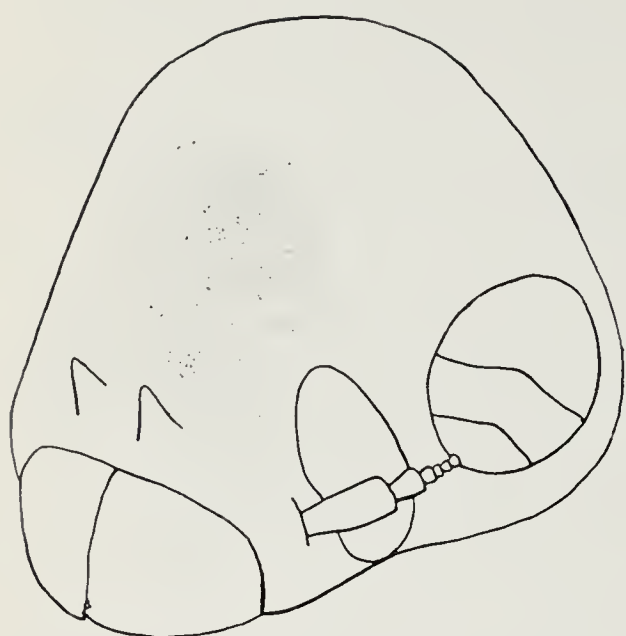
Elytra 1.2 times as long as wide, 1.3 times as long as pronotum; sides almost straight and parallel on more than basal two-thirds, broadly subemarginate behind; sutural striae feebly, others not at all impressed, the punctures coarse, deep, close; interstriae narrower than striae, uniseriately granulate to base, the nodules increase in height posteriorly. Declivity short, very steep, strongly sulcate; striae 1 rather strongly impressed; interstriae 1 moderately elevated, lateral areas ascending to broad summit on 4, tubercles absent on 1 and 2, of moderate size on 3 and 4, coarse on 5 to 9. Vestiture consisting of interstitial rows of moderately long hair on 3, 5, 7, and lateral areas, setae on other interstriae minute if present.

Female.—Similar to male except frontal concavity not as deep and extending further toward epistoma, the tubercles entirely absent; the elytral tubercles very slightly smaller.

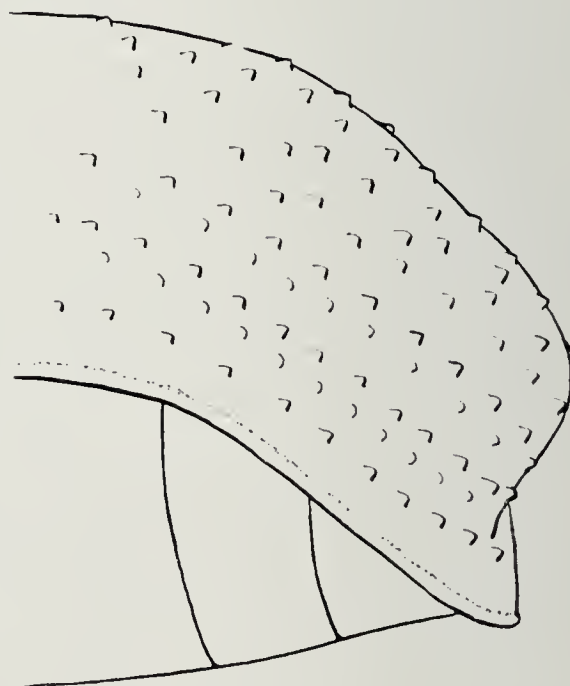
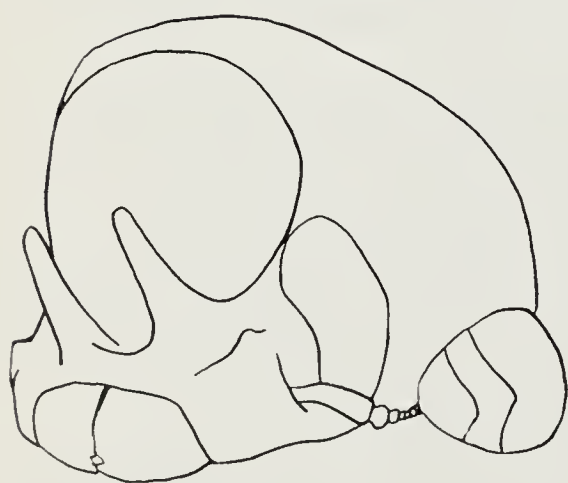
Type Locality.—Ten km. (6 mi.) south of Huajuapán, Oaxaca, Mexico.

Type Material.—The male holotype, female allotype and 41 paratypes were collected at the type locality on June 16, 1967, elevation about 2,000 m., No. 44, by S. L. Wood, in dying giant cactus; 15 additional paratypes were taken 32 km. (20 mi.) south of Huajuapán, No. 47, at the same date and elevation, from the same host. Both series were taken immediately below the epidermis in association with *granulifer*. When competing for space, this species tended to occupy the summits of ridges near bases of the cactus spines. The beetles were in yellow, drying tissue of a cut arm of the large giant cactus.

The holotype, allotype and paratypes are in my collection.



Figs. 1-2. *Cactopinus microcornis*, male: 1, left, anterolateral aspect of head; 2, right, lateral aspect of elytral declivity.



Figs. 3-4. *Cactopinus mexicanus*, male: 3, left, anterolateral aspect of head; 4, right, lateral aspect of elytral declivity.

Cactopinus niger n. sp.

This species is rather closely related to *cactophthorus* Wood, but it is easily distinguished by characters summarized in the above key.

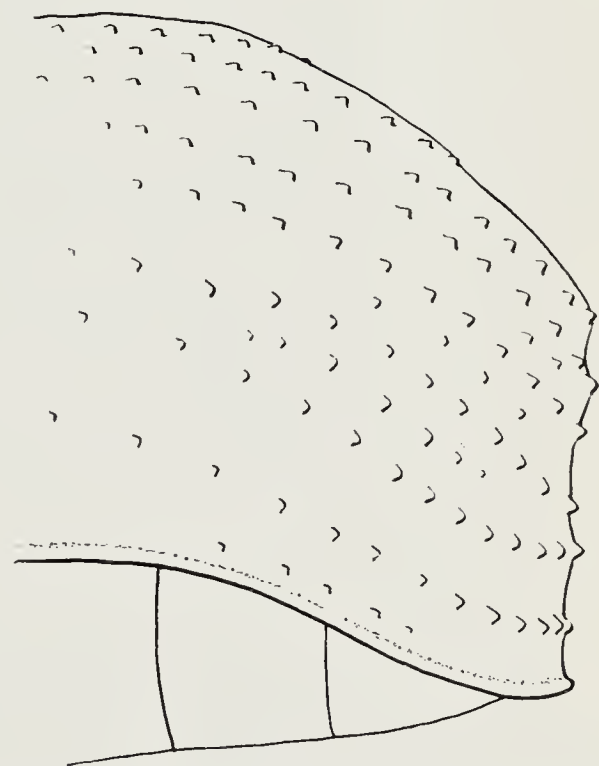
Male.—Length 1.7 mm. (paratypes 1.6-1.9 mm.), 2.3 times as long as wide; color black.

Frons deeply, broadly concave from base of horns to vertex, the upper margin acute; the basally contiguous pair of horns arise just above epistoma, fused on their basal half, diverging distally, their total length slightly less than distance equal to longitudinal axis of frontal concavity; lateral margins armed by a pair of small tubercles just above antennal insertior; surface of concavity smooth to subreticulate, with a few minute punctures, area above concavity rugulose-reticulate; vestiture of fine, short hair above horns, slightly longer on horns, much longer and somewhat reddish on epistomal margin. Antennal club rather small, oval, the sutures straight.

Pronotum 1.0 times as long as wide; widest on basal third, the sides moderately arcuate, distinctly constricted on anterior third, rather narrowly rounded in front; posterior margin produced behind in median area; asperate area beginning just behind anterior margin on median third, expanding toward sides toward middle, then narrowed to median process at base, not inflated laterally, the transition to asperate area gradual; lateral areas smooth, with isolated rounded granules, the granules transcend gradually into asperities above; vestiture hairlike, longer anteriorly.

Elytra 1.26 times as long as wide, 1.34 times as long as pronotum; sides almost straight and parallel on basal two-thirds, broadly subemarginate behind; striae 1 weakly, others not impressed, the punctures coarse, close, deep; interstriae smooth but undulating, the punctures uniseriate, moderately large, deep, their anterior margins slightly higher, a few weak granules toward declivity. Declivity short, steep, strongly, broadly sulcate; striae 1 strongly impressed on upper two-thirds; interstriae 1 slightly elevated, lateral areas ascend to broad summit on 4, lower fourth of 2 flattened, 3-9 each bearing a uniseriate row of moderately large, high, rounded tubercles. Vestiture consisting of a few short, intertrial, hairlike setae on declivity and sides.

Female.—Similar to male except frons feebly convex with a shallow impression on median third, the horns entirely absent.



Figs. 5-6. *Cactopinus niger*, male: 5, left, anterolateral aspect of head; 6, right, lateral aspect of elytral declivity.

Type Locality.—Thirty-two km. (20 mi.) south of Huajuapán, Oaxaca, Mexico.

Type Material.—The male holotype, female allotype and 80 paratypes were collected at the type locality on June 16, 1967, about 2,000 m., No. 46 by S. L. Wood, from a giant cactus having a distinct bluish color. They were taken from drying tissues just below the yellowing epidermis of a cut arm of the cactus.

The holotype, allotype and paratypes are in my collection.

Cactopinus granulifer n. sp.

As indicated by the characters summarized in the above key this species is very closely related to *niger* Wood, described above.

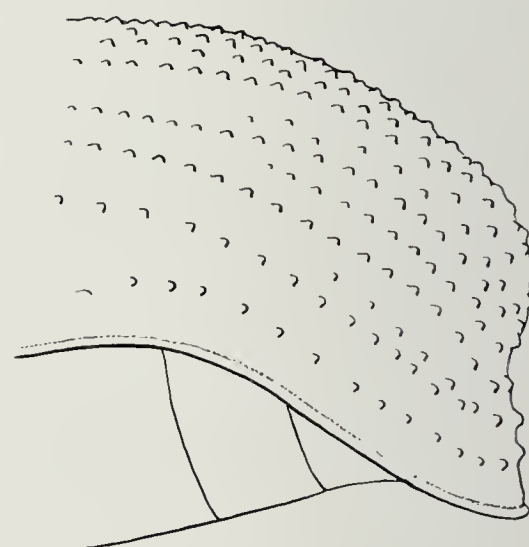
Male.—Length 1.4 mm. (paratypes 1.3-1.6 mm.), 2.36 times as long as wide; color black.

Frons deeply, broadly concave from epistomal horn to vertex, the upper margin abrupt, subacute; the epistomal horns similar to but smaller than in *niger*, about two-thirds as long as longitudinal axis of concavity; surfaces and vestiture as in *niger*. Antennal club rather small, subcircular in outline; suture 1 straight, 2 feebly bisinuate.

Pronotum 1.02 times as long as wide; as in *niger* except asperities begin well behind anterior margin and do not extend as far laterally, granules in lateral areas smaller and less abundant, intermixed with numerous, close, fine, deep punctures; vestiture hairlike, longer anteriorly.

Elytra 1.3 times as long as wide, 1.3 times as long as pronotum; outline essentially as in *niger*; striae 1 feebly, others not impressed, the punctures coarse, deep, close, with interspaces between punctures uniseriately granulate, the granules increasing in size posteriorly until almost as large as those of interstriae at declivital margin; interstriae narrower than striae, irregular, the uniseriate granules increasing in size toward declivity. Declivity short, very steep, broadly, deeply sulcate; general sculpture as in *niger* except lateral convexities higher, the granules higher, much more numerous (including those on striae), the granules reduced on striae 1 and interstriae 1 on lower two-thirds. Vestiture consisting of uniseriate rows of erect interstitial hair of moderate length, except minute on declivity.

Female.—Similar to male except frons weakly convex, with a slight transverse impression near upper level of eyes.



Figs. 7-8. *Cactopinus granulifer*, male: 7, left, anterolateral aspect of head; 8, right, lateral aspect of elytral declivity.

Type Locality.—Ten km. (6 mi.) south of Huajuapán, Oaxaca, Mexico.

Type Material.—The male holotype, female allotype and 37 paratypes were collected at the type locality on June 16, 1967, about 2,000 m., No. 44, by S. L. Wood, from the same piece of giant cactus that contained *microcornis*; 42 paratypes were taken 32 km. (20 mi.) south of Huajuapán on the same day, No. 47, also in association with *microcornis*; 16 paratypes were taken 6 km. (4 mi.) north of Totolapán, Oaxaca, Mexico, June 20, 1967, 1,200 m., No. 67, by S. L. Wood. When *microcornis* was present this species tended to avoid the tops of ridges where thorns were located on the cactus and confined their attack

to drying tissues just below the epidermis in the bottoms and sides of valleys between the ridges. A small sample of cactus was preserved to show the crude cave-type tunnels of this species. The sample was placed on a shelf where previously unobserved larvae matured and produced at least two additional generations in the same piece of cactus before the process was terminated by fumigation.

The holotype, allotype and paratypes are in my collection.

***Cactopinus nasutus* n. sp.**

This species is allied to *cactophthorus* Wood, but it is easily distinguished by the broad antennal club which has bisinuate sutures, and by other characters summarized in the above key.

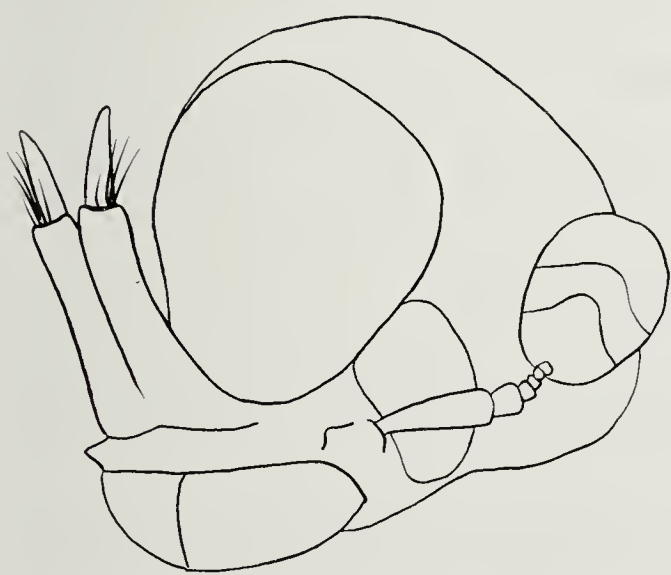
Male.—Length 1.6 mm. (paratypes 1.4-1.7 mm.), 2.2 times as long as wide; color black.

Frons extensively excavated from epistomal horns to well back on the vertex, reaching inner margins of eyes and exceeding width of eyes above, upper margin acute; surface of excavation smooth, shining, a feeble median elevation on lower half; horns rather large, as long as longitudinal axis of excavation, their proximal half fused, diverging slightly apically, the subapical tufts of hair well developed; a pair of small tubercles located on lateral margins just above antennal insertion; vestiture confined to horns and epistomal margin. Antennal club large, circular in outline, the sutures very strongly bisinuate.

Pronotum 1.02 times as long as wide; outline as in *niger*; asperities attain anterior margin and blend laterally with rounded granules; a few, fine, punctures evident laterally; vestiture hairlike, longer anteriorly.

Elytra 1.3 times as long as wide, 1.3 times as long as pronotum; outline as in *niger*; striae 1 weakly, others not at all impressed, the punctures coarse, deep, close; interstriae almost as wide as striae, shining, undulating slightly, the punctures uniseriate, rather coarse, deep, close, not at all granulate. Declivity steep, broadly, rather shallowly sulcate; general sculpture as in *niger*, the tubercles on interstriae 3-9 uniseriate, comparatively small, those on lower half of 1 and 2 obsolete. Vestiture consisting of uniseriate rows of interstitial hair; not evident in impressed area of declivity.

Female.—Similar to male except frons weakly convex, flattened below, with a pair of low, subtuberculate, raised areas in position of male horns.



Figs. 9-10. *Cactopinus nasutus*, male: 9, left, anterolateral aspect of head; 10, right, lateral aspect of elytral declivity.

Type Locality.—Sixteen km. (10 mi.) south of Matamoros, Puebla, Mexico.

Type Material.—The male holotype, female allotype and 67 paratypes were collected at the type locality on June 14, 1967, 1,700 m., No. 36, by S. L. Wood, from a broken giant cactus; 12 paratypes were taken 6 km. (4 mi.) north of Totolapan, Oaxaca, Mexico, June 20, 1967, 1,200 m., No. 67, by S. L. Wood, from a broken giant cactus in series with *granulifer*.

The holotype, allotype and paratypes are in my collection.

***Cactopinus carinatus* n. sp.**

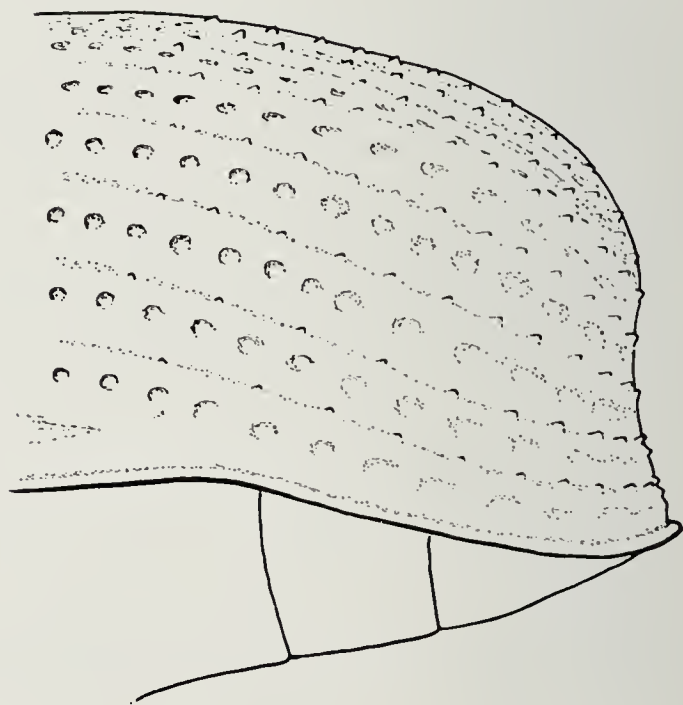
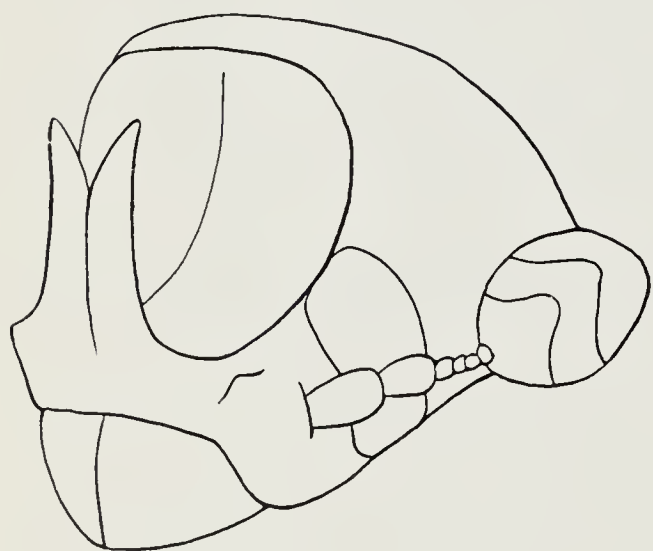
This species is very closely related to *nasutus* Wood, described above, but it is distinguished by characters summarized in the above key.

Male.—Length 1.6 mm. (paratypes 1.5-1.8 mm.), 2.4 times as long as wide; color black.

Frons as in *nasutus* except excavation slightly less extensive above, and divided by a distinctly elevated, median carina; the horns slightly smaller. Antennal club large, subcircular in outline, the sutures very strongly bisinuate, 1 angulate.

Pronotum and elytra as in *nasutus* except stria punctures smaller, interstria punctures on disc minute, the declivital granules of reduced size, and declivital sulcus narrower, the lateral convexities more abruptly elevated.

Female.—Similar to female of *nasutus* except frons with a median carina on upper half, the transverse impression at upper level of eyes more pronounced, and the subepistomal elevations somewhat more extensive.



Figs. 11-12. *Cactopinus carinatus*, male: 11, left, anterolateral aspect of head; 12, right, lateral aspect of elytral declivity.

Type Locality.—Twenty-six km. (16 mi.) north of Ixmiquilpan, Hidalgo, Mexico.

Type Material.—The male holotype, female allotype and 46 paratypes were collected at the type locality on July 10, 1967, 1,700 m., No. 190, by S. L. Wood, from a broken giant cactus.

The holotype, allotype and paratypes are in my collection.

Cactopinus depressus Bright

This species was described (Bright, 1967) from two encrusted males taken from *Yucca* in the State of San Luis Potosi, Mexico. A series of 121 specimens were taken from *Yucca* leaves 26 km. north of Ixmiquilpan, Hidalgo, Mexico, on July 10, 1967, 1,900 m. elevation, by myself. The monogamous adult beetles excavated a transversely elongate, cave-type gallery where eggs were deposited along the margins, in individual niches. The larval mines extended parallel to the longitudinal leaf fibers in the direction away from the parental gallery. The yellow, recently dead leaves immediately below the green growing portion of the living plant, were selected for attack. There appeared to be more attacks on the basal half of the leaf; this might have been to avoid high temperatures from direct sunlight.

The female of the species has not been reported previously.

Female.—Length 1.3 mm., 2.6 times as long as wide; color very dark brown, the summit usually lighter.

Frons convex above, weakly impressed on median third below; surface subreticulate with obscure punctures; a conspicuous permandibular epistomal lobe present; vestiture of coarse, moderately abundant, rather long hair, epistomal brush conspicuous. Antennal club small, broadly oval, the sutures evidently straight, not clearly indicated.

Pronotum 0.95 times as long as wide; widest at middle, the sides moderately arcuate, not noticeably converging before the very broadly rounded anterior margin; posteromedian area not produced toward scutellum; asperities confined to a triangular area, the asperate area subinflated posteriorly, the asperities extending from anterior margin to posteromedian area but ending before posterior margin; lateral areas minutely granulose, devoid of granules and punctures; vestiture hairlike, some setae coarse.

Elytra 1.54 times as long as wide, 1.63 times as long as pronotum; sides almost straight and parallel on basal three-fourths, rather broadly rounded behind; striae not impressed, the punctures very small, shallow; interstriae as wide or wider than striae, the punctures not indicated; surfaces usually covered by an incrustation even in teneral specimens. Declivity rather steep but much more gradual than in other *Cactopinus*, the sulcus very shallow, narrow; devoid of granules. Vestiture consisting of sparse interstitial hair.

LITERATURE CITED

- BLACKMAN, M. W. 1938. New species of *Cactopinus* Schwarz (Coleoptera: Scolytidae). Proc. Entomol. Soc. Washington, 40:151-157.
- BRIGHT, D. E., JR. 1967. A review of the genus *Cactopinus*, with descriptions of two new species and a new genus (Coleoptera: Scolytidae). Canadian Entomol., 99:917-925.
- CHAMBERLIN, W. J. 1939. The bark and timber beetles of North America north of Mexico. Oregon State University Press, Corvallis. vi 513 p.
- SCHWARZ, E. A. 1899. Insects of the giant cactus by Hubbard. Descriptions of new genera and species by Schwarz. Psyche, 8 (Suppl.1):1-14.
- WOOD, S. L. 1957. New species of bark beetles (Coleoptera: Scolytidae), mostly Mexican. Part IV. Gt. Basin Nat., 17:105-110.
- 1961. A key to the North American genera of Scolytidae. Coleopt. Bull., 15:41-48.
- 1967. New species of bark beetles (Coleoptera: Scolytidae), mostly Mexican. Part VII. Gt. Basin Nat., 27:36-57.